		U.S. DEPARTMENT OF COMMERCE			ATTY, DOCKET NO.	1	APPLICATION NO.					
PATENT AND TRADEM			ARK OFFICE		110197.402C1		10/612,713_					
SUPPLEMENTAL					APPLICANTS David A. Tirrell et al.							
OCT A O 700 PRIMATION DISCLOSURE STATEMENT					FILING DATE	GF	ROUP ART UNIT					
	 				July 1, 2003		536					
U.S. PATENT DOCUMENTS												
*EXAMINER	AMINER DOCUMENT NUMBER			ATE NAME CLASS SL				FILING DATE				
INITIAL	77	S-270-005	12/06/04	Hennecke	ret al	435	69.1					
FOREIGN PATENT DOCUMENTS												
	T .	DOCUMENT	DATE	GNFATEN	COUNTRY							
	<u> </u>	NUMBER	DATE					YES NO				
	AB											
OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)												
	AC		Bain, J., et al., "Biosynthetic Site-specific Incorporation of a Non-natural Amino Acid into a Polypeptide," J. Am. Chem. Soc., 111:8013-8014, 1989.									
	<u> </u>					Derivati	vec Heina R	adical				
`	AD	Barton, D., et al., "Synthesis of Novel a-Amino-Acids and Derivatives Using Radio Chemistry: Synthesis of L- and D-a-Amino-Adipic Acids, L-a-aminopimelic Acids										
			Appropriate Unsaturated Derivatives," <i>Tetrahedron</i> , 43:4297-4308, 1987.									
	AE	Bradley, D.,	Bradley, D., et al., tRNA ₂ ^{Gin} Su ⁺ 2 Mutants that Increase Amber Suppression," J Bacteriol.;									
	145(2):704-12, February 1981.											
	AF	Brick, P., et										
			Interaction of the Enzyme with the Tyrosyl Adenylate Intermediate," J. Mol. Biol.,									
			208(1):83-98, 1989.									
	AG	Budisa, N., et al., "Bioincorporation of Telluromethionine into Proteins: a Promising										
			Approach for X-ray Structure Analysis of Proteins," J Mol Biol., 270(4):616-23, July 25, 1997.									
			tal "High-	level Biosy	nthetic Substitution of	Methion	ine in Prote	ins by its				
	AH	1 1	, -	- 1	enomethionine, Tellur							
			•									
	Escherichia coli," Eur. J. Biochem, 230(2):788-796, 1995. Budisa, N., et al., "Residue-specific Bioincorporation of Non-natural, Biologically Acti Amino Acids into Proteins as Possible Drug Carriers: Structure and Stability of the Per-											
		1	thiaproline Mutant of Annexin V," Proc Natl Acad Sci USA, 95(2):455-9, January 20,									
	1998.											
	AJ	Budisa, N., e	Budisa, N., et al., "Toward the Experimental Codon Reassignment in Vivo: Protein Building									
		with an Expa	with an Expanded Amino Acid Repertoire," FASEB J., 13(1):41-51, January 1999.									
		Christie, B.,	Christie, B., et al., "Synthesis of Optically Pure Pipecolates from L-Asparagine. Application									
	AK	to the Total Synthesis of (+)-Apovincamine through Amino Acid Desarbonylation and										
			Iminium Ion Cyclization," J. Org. Chem., 50:1239-1246, 1985.									
EXAMINE	R	/David Guz			DATE CONSIDERED. ///20/06							
* EXAMIN			•		onformance with MPEP 609. Draw with next communication to appli	line through						

APPLICATION NO. ATTY, DOCKET NO. U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE 110197.402C1 10/612,713 APPLICANTS SUPPLEMENTAL David A. Tirrell et al. INFORMATION DISCLOSURE STATEMENT GROUP ART UNIT (Use several sheets if necessary) FILING DATE July 1, 2003 1636 **U.S. PATENT DOCUMENTS** FILING DATE *EXAMINER CLASS **SUBCLASS** DOCUMENT NUMBER IF APPROPRIATE INITIAL BA FOREIGN PATENT DOCUMENTS TRANSLATION DOCUMENT DATE COUNTRY NUMBER YES BB OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) Cornish, V., et al., "Site-specific Protein Modification Using a Ketone Handle," J. Am. BC Chem. Soc., 118:8150-8151, 1996. Doctor, B., et al., "Species Specificity Of Amino Acid Acceptor Ribonucleic Acid And BD Aminoacyl Soluble Ribonucleic Acid Synthetases," J Biol Chem., 238:3677-81, November 1963 Döring, W. et al., "Enlarging the Amino Acid set of Escherichia coli by Infiltration of the BE Valine Coding Pathway," Science, 292(5516):501-4, April 20, 2001. Dougherty, D., "Unnatural Amino Acids as Probes of Protein Structure and Function," Curr BF Opin Chem Biol., 4(6):645-52, December 2000. Ellman, J., et al., "Biosynthetic Method for Introducing Unnatural Amino Acids Site-BG Specifically Into Proteins," Methods Enzymol., 202:301-36, 1991. Ellman, J., et al., "Site-specific Lineorporation of Novel Backbone Structures into BH Proteins," Science, 255(5041):197-200, January 10, 1992. England, P., et al., "Backbone Mutations in Transmembrane Domains of a Ligand-gated Ion Bl Channel: Implications for the Mechanism of Gating," Cell, 96(1):89-98, January 8, 1999. Fechter, P., et al., "Major Tyrosine Identity Determinants in Methanococcus Jannaschii and BJ Saccharomyces cerevisiae tRNA(Tyr) are Conserved but Expressed Differently," Eur J Biochem., 268(3):761-7, February 2001. Francisco, J., et al., "Production and Fluorescence-activated Cell Sorting of Escherichia coli BK Expressing a Functional Antibody Fragment on the External Surface," Proc Natl Acad Sci U SA., 90(22):10444-8, November 15, 1993. Friedman, O., et al., "Synthesis of Derivatives of Glutamine as Model Substrates for Anti-Tumor Agents," J. Am. Chem. Soc., 81:3750-3752, 1959. Furter, R., "Expansion of the Genetic Code: Site-directed p-fluoro-phenylalanine ВМ Incorporation in Escherichia coli.," Protein Sci., 7(2):419-26, February 1998. **EXAMINER** DATE-COMMINERED /David Guzo/ 11/20/06 * EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applican(s).

Sheet 3 of 8

APPLICATION NO. ATTY, DOCKET NO. U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE 10/612,713 110197.402C1 **APPLICANTS** SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT David A. Tirrell et al. (Use several sheets if necessary) FILING DATE **GROUP ART UNIT** 1636 July 1, 2003 **U.S. PATENT DOCUMENTS** FILING DATE *EXAMINER SUBCLASS CLASS DOCUMENT NUMBER DATE NAME IF APPROPRIATE INITIAL CA FOREIGN PATENT DOCUMENTS TRANSLATION DOCUMENT DATE COUNTRY NUMBER YES NO СВ OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) Gabriel, K., et al., "A Set of Plasmids Constitutively Producing Different RNA Levels in CC Escherichia coli," J Mol Biol., 290(2):385-9, July 9, 1999. Gallivan, J., et al., "Site-specific Incorporation of Biotinylated Amino Acids to Identify CD Surface-exposed Residues in Integral Membrane Proteins," Chem Biol., 4(10):739-49, October 1997. Gay, & et al., "Modification of the Amino Acid Specificity of Tyrosyl-tRNA Synthetase by CE Protein Engineering," FEBS Letters, 318:167-171, 1993. Giegé, R., et al., "Aspartate Identity of Transfer RNAs," Biochimie 78(7):605-23, 1996. CF Giegé, R., et al., "Doiversal Rules and Idiosyncratic Features in tRNA Identity," Nucleic CG Acids Res., 26(22):50 12-35, November 15, 1998. Guckian, K., et al., "Highly Precise Shape Mimicry by a Difluoro-toluene Deoxynucleoside, СН a Replication-Competent Substitute for Thymidine," Angew Chem. Int. Ed. Engl. *36*(24):2825-2828, 1997. Hamano-Takaku, F., et al., "A Mutant Escherichia coli Tyrosyl-tRNA Synthetase Utilizes CI the Unnatural Amino Acid Azatyrosine more Efficiently than Tyrosine," J Biol Chem., 275(51):40324-8, December 22, 2000. Hartley, R., "Barnase and Barstar. Expression of its Cloned Inhibitor Permits Expression of CJ Cloned Ribonuclease," J Mol Biol., 202(4):913-5, August 20, 1988. Hohsaka, T., et al., "Efficient Incorporation of Nonnatural Amino Acids with Large CK Aromatic Groups into Streptavidin in In Vitro Protein Synthesizing Systems," J. Am. Chem. Soc., 121:34, 1999. Ibba, M., et al., "Relaxing the Substrate Specificity of an Aminoacy-tRNA Synthetase CL Allows in vitro and in vivo Synthesis of Proteins Containing Unnatural Amino Acids," FEBS Lett., 364(3):272-5, May 15, 1995. **EXAMINER** DATE CONSIDERED /David Guzo/ 11/20/06 Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in * EXAMINER: conformance and not considered. Include copy of this form with next communication to applican(s).

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT					1			APPLICATION NO. 10/612,713					
					APPLICANTS 10/612,713								
					David A. Tirrell et al.								
(Use several sheets if necessary)						FILING DATE GROUP ART UNIT							
						July 1, 2003		163	6				
U.S. PATENT DOCUMENTS													
*EXAMINER INITIAL		DO	CUMENT NUMBER	DATE		NAME	CLA	ss	SUBCLASS	FILING DATE IF APPROPRIATE			
	DA												
FOREIGN PATENT DOCUMENTS													
			DOCUMENT NUMBER	DATE	COUNTRY TRA						ATION		
	DB		***										
· <u>-</u>			OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)										
											/ iza :=		
	DC		Ibba, M., et al., "Substrate Specificity is Determined by Amino acid Binding I Escherichia coli Phenylalanyl-tRNA Synthetase," <i>Biochemistry</i> , 33(23):7107-							_			
				coli Phenyla	ianyi-tKNA	Synthetase," Biochem	istry, .	33(2	3):710 <i>1-</i> 42	, June	14,		
	1		1994.										
	DD		Ibba, M., "Strategies for in vitro and in vivo Translation with Non-patural Amino Acids,"										
· · · · · · · · · · · · · · · · · · ·			Biotechnol Genet Eng Rev. 13:197-216, December 1995.										
	DΈ	Jakubowski, H., et al., "Editing of Errors in Selection of Amino Acids for Protein											
		-	Synthesis.," <i>Microbiol Rev.</i> , 56(3):412-29, September 1992. Jeruzalmi, D., et al., "Structure of T7 RNA Polymerase Complexed to the Rranscriptional										
·	DF		Inhibitor T7 Lysozyme," EMBO J., 17(14):4101-13, July 15, 1998.										
	Name of Non-Natural A									Amino)		
	20		Acids: Control Of Incorporation of Methionine Analogues by Methionyl-tRNA Syntheta								tase,"		
			Tetrahedron, 56:9487-9493, 2000.										
	DH		King, F., et a	l., "A New S	f Glutamine and of γ-D	ipepti	des	of Glutami	c Acid	from			
	Dit		Phthalylated Intermediates," J. Chem. Soc., 4:3315-3319, 1949.										
	Kleeman, T., et al., "Human Tyrosyl-IRNA Synthetase Shares Amino Acid Sequenc								uence				
	וט		Homology with a Putative Cytokine," J Biol Chem., 272(22):14420-5, May 30, 1997.										
	נם		Kleina, L, et al., "Construction of Escherichia coli Amber Suppressor tRNA Genes. II.								•		
	נט		Synthesis of Additional tRNA Genes and Improvement of Suppressor Efficiency," J Mol										
			Biol., 213(4):705-17, June 20, 1990.										
			Kool, E., "Synthetically Modified DNAs as Substrates for Polymerases," Curr Opin Chem										
	DK		Biol., 4(6):602-8, December 2000.										
	DL		Koskinen, et al., "Synthesis of 4-Substituted Prolines as Conformationally Constrained								i		
			Amino Acid Analogues,: J. Org. Chem. 54:1859-1866, 1989.										
	DM		•	•	•	igned Codons in Micro				_	sed		
			Amino Acid Mutagenesis," Nucleic Acids Res., 25(22):4685-9, November 15, 1997.										
EXAMINE	R		/David Guz	0/		DATE CONSIDERED	11/	20/	06				
* EXAMINI	ER:	Initial	if reference consider	red, whether or no	t criteriais in cor	nformance with MPEP 609. Draw	v line thro	ough c	itation if not in	_			

U.S. DEPARTMENT OF COMMERCE					ATTY. DOCKET NO. APPLICATION NO. 110197.402C1 10/612,713								
PATENT AND TRADEMARK OFFICE SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT					110197.402C1 10/612,713 APPLICANTS								
					David A. Tirrell et al.								
(Use several sheets if necessary)						FILING DATE		GRO	UP ART UNIT				
						July 1, 2003		163	6				
U.S. PATENT DOCUMENTS													
*EXAMINER INITIAL		DO	CUMENT NUMBER	DATE NAME CLASS SUBC					SUBCLASS	FILING DATE IF APPROPRIATE			
	EA												
FOREIGN PATENT DOCUMENTS													
	DOCUMENT DATE					COUNTRY				TRANSLATION			
		+	NUMBER							YES	NO		
	EB	<u> </u>				· · · · · · · · · · · · · · · · · · ·	.						
OTHER PRIOR ART (Including Author, Title, Date, Perlinent Pages, Etc.)													
	EC					inoacyl-tRNA Syntheta					Or		
						oration of Amino Acid					,		
			-	ind in Eubac	teria," Proc	Natl Acad Sci USA.,	५४(३)	:226	8-13, Febr	uary 2	/ •		
		\searrow	2001.							<u> </u>			
	ED		Lee, J-Y., et al., "Novel Biological Process for L-DOPA Production from L-Tyrosine by p-hydroxyphenylacetate 3-hydroxylase," <i>Biotechnology letters</i> , 20(5):479-482, May 1998.										
	-												
	EE		Liu, D., et al., "Characterization of an 'orthogonal' Suppressor tRNA Derived from E. coli tRNA ₂ ^{Gln} ," Chem Biol., 4(9):685-91, September 1997.										
	EF	Lorincz M. et al. "Enzyme-generated Intracellular Fluorescence for Single-cell Repo									rter		
			Gene Analysis Utilizing Escherichia Coli Beta-glucuronidase," Cytometry, 24(4):321-9,										
			August 1, 1996.										
	EG			•	/ \	on and Gating in a K ⁺				one			
	ļ	Mutations in the Selectivity Filter," Nat Neurosci., 4(3):239-46, March 2001.											
	ÉН	Ma, C., et al., "In Vitro Protein Engineering Using Synthetic tRNAAla with Different											
		Anticodons," Biochemistry, 32(31):7939-45, August 10, 1993.											
	Matsoukas, J., et al., "Differences in Backbone Structure Between Angiotensin II A									II Ago	nists		
		and Type 1 Antagonists," J Med Chem., 38(23):4660-9, November 10, 1995.											
	EJ		ı /			l Expansion of the Gen	•		_		erase		
Recognition of a Highly Stable, Self-Pairing Hydrophobic Base," J. Am. Chem. Self-Pairing Hydrophobic Base, J.									Soc.,				
	121:11585-11586, 1999.												
	ÆΚ		Meggers, E., et al., "A Novel Copper-Mediated DNA Base Pair," J. Am. Chem. Soc., 122:10714-15, 2000.										
	EN												
	Mendel, D., et al., "Site-directed Mutagenesis with an Expanded Genetic Code," Annu Rev												
			Biophys Bion	nol Struct., .	24:435-62,					$\stackrel{\sim}{-}$			
EXAMINE	ER		/David G	uzo/	-	DATE CONCLEGED	11/	70/	06				
* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in													

Sheet 6 of 8 ATTY, DOCKET NO. APPLICATION NO. U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE 10/612,713 110197.402C1 **APPLICANTS** SUPPLEMENTAL David A. Tirrell et al. INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) FILING DATE GROUP ART UNIT July 1, 2003 1636 U.S. PATENT DOCUMENTS FILING DATE **EXAMINER SUBCLASS** DOCUMENT NUMBER DATE NAME CLASS IF APPROPRIATE INITIAL FA FOREIGN PATENT DOCUMENTS TRANSLATION DOCUMENT DATE COUNTRY NUMBER YES . FΒ OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) Miller, J., et al., "Flash Decaging of Tyrosine Sidechains in an Ion Channel," Neuron, FC 20(4):619-24, April 1998. Minks, C., et al., "Noninvasive Tracing of Recombinant Proteins with FD "Fluorophenylalanine-fingers," Anal Biochem., 284(1):29-34, August 15, 2000. Moore, B., et al., "Quadruplet Codons: Implications for Code Expansion and the FE Specification of Translation Step Size," J Mol Biol., 298(2):195-209, April 28, 2000. Nickitenko, A., et al., 2 Å Resolution Structure of DppA, a Periplasmic Dipeptide FF Transport/Chemosensory Receptor," Biochemistry, 34(51):16585-95, December 26, 1995. Nilsson, B., et al., "A Synthetic IgG-binding Domain Based on Staphylococcal Protein A," FG Protein Eng., 1(2):107-13, Feb-Mar 1987. O'Mahony, D., et al., "Glycine tRNA Mutants with Normal Anticodon Loop Size Cause -1 FH Frameshifting," Proc Natl Acad Sci & S.A., 86(20):7979-83, October 1989. Ogawa, A., et al., "Efforts Toward the Expansion of the Genetic Alphabet: Information FI Storage and Replication with Unnatural Hydrophobic Base Pairs," J. Am. Chem. Soc. 122:3274-3287, 2000. Ogawa, A., et al., "Rational Design of an Unnatural Base Pair with Increased Kinetic FJ Selectivity," J. Am. Chem. Soc., 122:8803-8804, 2008. Ohno, S., et al., "Co-expression of Yeast Amber Suppressor tRNA Tyr and Tyrosyl-tRNA FΚ Synthetase in Escherichia coli: Possibility to Expand the Genetic Code," J Biochem (Tokyo). 124(6):1065-8, December 1, 1998. Pastrnak, M., et al., "A New Orthogonal Suppressor tRNA/aminoacyl-tRNA Synthetase Pair for Evolving an Organism with an Expanded Genetic Code," Helv. Chim. Acta, 83:2277-2286, 2000. Pastrnak, M., et al., "Phage Selection for Site-specific Incorporation of Unnatural Amino FM Acids into Proteins In Vivo," Bioorg Med Chem., 9(9):2373-9, 2001. **EXAMINER** DATE GONSIDERED /David Guzo/

Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in

conformance and not considered. Include copy of this form with next communication to applican(s).

* EXAMINER:

ATTY. DOCKET NO. APPLICATION NO. U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE 10/612,713 110197.402C1 APPLICANTS SUPPLEMENTAL David A. Tirrell et al. INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) FILING DATE GROUP ART UNIT July 1, 2003 1636 U.S. PATENT DOCUMENTS FILING DATE *EXAMINER SUBCLASS **CLASS** DOCUMENT NUMBER DATE NAME IF APPROPRIATE INITIAL GA FOREIGN PATENT DOCUMENTS TRANSLATION DOCUMENT NUMBER GB OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) Saks, M., et al., "An Engineered Tetrahymena tRNAGIn for in Vivo Incorporation of GC Unnatural Amino Acids into Proteins by Nonsense Suppression," J Biol Chem., 271(38):23169-75, September 20, 1996. Santoro, S., et al., "An Efficient System for the Evolution of Arninoacyl-tRNA Synthetase SD Specificity," Nat. Biotechnol., 20(10):1044-8, October 20, 2000. Savers, J., et al., "5'-3' Exonucleases in Phosphorothioate-based Oligonucleotide-directed GE Mutagenesis," Nucleic Acids Res., 16(3):791-802, February 11, 1988. Shao, J., et al., "Unprotected Peptides as Building Blocks for the Synthesis of Peptide GF Dendrimers with Oxime, Hydrazone, and Thiazolidine Linkages," J. Am. Chem. Soc., *117*(14):3893-3899, 1995. Sharma, N., et al., "Efficient Introduction of Aryl Bromide Functionality into Proteins in GG Vivo," FEBS Lets., 467(1):37,40, February 4, 2000. Sieber, V., et al., "L'heraries of Hybrid Proteins from Distantly Related Sequences," Nat GH Biotechnol., 19(5):456-60, May 2001. Sprinzl, M., et al. "Compilation of tRNA Sequences and Sequences of tRNA Genes," Gl Nucleic Acids Res., 26(1):148-\$3, January 1, 1998. Steer, B., et al., "Major Anticodon-binding Region Missing from an Archaebacterial tRNA GJ Synthetase," J Biol Chem., 274(50):35601-6, December 10, 1999. Subasinghe, N., et al., "Quisqualic Acid Analogues: Synthesis of β-heterocyclic 2-GK aminopropanoic Acid Derivatives and their Activity at a Novel Quisqualate-sensitized Site," J Med Chem., 35(24):4602-7, November 27, 1992. Sussman, J., et al., "Crystal Structure of Yeast Phenylalanine Transfer RNA. I. Crystallographic Refinement," J Mol Biol., 123(4):607-30, August 5, 1978. Switzer, C., et al., "Enzymatic Incorporation of a New Base Pair into DNA and RNA,." J. GM Am. Chem. Soc., 111:8322-8323, 1989. **EXAMINER** DATE CONSIDERED /David Guzo/ 06 * EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in

conformance and not considered. Include copy of this form with next communication to applican(s).

Sheet 8 of 8 APPLICATION NO. ATTY. DOCKET NO. **U.S. DEPARTMENT OF COMMERCE** PATENT AND TRADEMARK OFFICE 10/612,713 110197.402C1 **APPLICANTS** SUPPLEMENTAL David A. Tirrell et al. INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) FILING DATE GROUP ART UNIT 1636 July 1, 2003 **U.S. PATENT DOCUMENTS** FILING DATE *EXAMINER SUBCLASS **CLASS** DOCUMENT NUMBER DATE NAME IF APPROPRIATE INITIAL HA OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.) Tae, E., et al., "Efforts Toward Expansion of the Genetic Alphabet: Replication of DNA HC with Three Base Pairs," J Am Chem Soc., 123(30):7439-40, August 1, 2001. Tang, Y., et al., "Fluorinated Coiled-Coil Proteins Prepared In Vivo Display Enhanced OH Thermal and Chemical Stability," Angew Chem Int Ed Engl., 40(8):1494-1496, April 17, 2001. Turcatti, G., et al., "Probing the Structure and Function of the Tachykinin Neurokinin-2 HE Receptor through Biosynthetic Incorporation of Fluorescept Amino Acids at Specific Sites," J Biol Chem., 271(33):19991-8, August 16, 1996. Van Hest, J, et al., "Efficient Incorporation of Unsaturated Methionine Analogues into HF Proteins in Vive," J. Am. Chem. Soc., 122:1282-1288, 2000. Van Hest, J., et al., "Efficient Introduction of Alkene Functionality into Proteins in vivo," HG FEBS Lett., 428(1-2):68-70, May 22, 1998. Wakasugi, K., et al., "Genetic Code in Evolution: Switching Species-specific нн Aminoacylation with a Peptide Transplant," EMBO J., 17(1):297-305, January 2, 1998. Wang, L., et al., "A New Functional Suppressor tRNA/aminoacyl-tRNA Synthetase Pair for н the in Vivo Incorporation of Unnatural Amino Acids into Proteins," J. Am. Chem. Soc., 122:5010-5011, 2000. Wang, L., et al., "A General Approach for the Generation of Orthogonal tRNAs," Chem HJ Biol., 8(9):883-90, September 2001. Wang, L. et al., "Expanding the Genetic code of Escherichia coli," Science, 292(5516):498-ΗK 500, April 20, 2001. Wang, L., et al., "Expanding the genetic code," Chem Commun (Camb)., (1):1-11, January HL **7**. 2002. Whelihan, E., et al., "Rescuing an Essential Enzyme-RNA Complex with a Non-essential НМ Appended Domain," EMBO J., 16(10):2968-74, May 15, 1997. Yarus, M., "Translational Efficiency of Transfer RNA's: Uses of an Extended Anticodon," HN Science, 218(4573):646-52, November 12, 1982. Zlokarnik, G., et al., "Quantitation of Transcription and Clonal Selection of Single Living

EXAMINER /David Guzo/

HO

DATE CONSIDERED

Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applican(s).

Cells with Beta-lactamase as Reporter," Science, 279(5347):84-8, January 2, 1998.

* EXAMINER: